

Application No. 10/032,272
October 1, 2004
Response to Office action of July 2, 2004

REMARKS

Claims 1-9 and 13-45 remain in this application. Claims 10-12 have been cancelled.

I. CLAIM REJECTIONS – 35 U.S.C. § 102

A. Rejection of claims 15, 17, 18, 21, and 31 under 35 U.S.C. § 102(b) as anticipated by *Ortiz et al.*

1. Examiner comments

The Examiner rejected claims 15, 17, 18, 21, and 31 under 35 USC § 102(b) as anticipated by *Ortiz et al.* (US Patent No. 4,988,875). The Examiner stated that, regarding claim 15, which is representative of claim 31, *Ortiz et al.* discloses:

plural imaging devices capturing video images; and

a computer analyzing each image separately, extracting discrete anomalies, and generating an indication if an anomaly is a defect.

2. Law

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.¹ The identical invention must be shown in as complete detail as is contained in the ... claim.² In addition to disclosing every claim limitation, an anticipatory prior art reference must enable the practice of the invention and describe it sufficiently to have placed it in the possession of a person of ordinary skill in the field of the invention.³

3. Claims 15, 17, 18, 21, and 31

Claim 15 requires a plurality of imaging devices configured to capture video images of coiled tubing as the tubing passes in front of the imaging devices and a computer system configured to execute pattern recognition software to analyze each image separately, extract discrete anomalies from each image, and generate an indication if a discrete anomaly is identified as a defect in an image. Claim 31 similarly requires capturing images of the outer circumference of the tubing with the imaging devices and transmitting the images to a processor, receiving the images by the processor and inputting the images to computer vision software running on the

¹ *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

² *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

³ *In re Paulsen*, 30 F.3d 1475, 1478-79 (Fed. Cir. 1994).

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processor, processing each image separately on the computer vision software, and identifying predetermined discrete anomalies in the tubing in each image.

Ortiz et al. does not teach analyzing each image separately. Instead, *Ortiz et al.* only compares changes in the magnitude of the video signal from one image to another. The Examiner stated that claims 15 and 31 require a "computer system" to "analyze each image separately, extract discrete anomalies from each image, and generate an indication if a discrete anomaly is identified". The Examiner then pointed out that the claims do not further limit the nature of the analysis and defined "analysis" as a methodical examination. The Examiner referred to Applicants' previous statements that *Ortiz et al.* "identifies a variation in the signals delivered from camera 36". The Examiner then concluded that some type of analysis of the signals must be made in order to determine whether a variation exists. The Examiner further stated that *Ortiz et al.* teaches an analysis of the "magnitude" of the video signals to determine whether or not a variation exists that is indicative of a defect. Applicants agree that *Ortiz et al.* does make some type of an analysis. *Ortiz et al.* discloses that the motion detector circuits 112 detect the variations in the magnitude of a video signal as the video signal changes from an image that is defect free to a signal from an image containing a defect.⁴ By detecting a variation in the video signal, *Ortiz et al.* is able to detect the defect. However, the motion detector circuit 112 does not analyze or process each image separately. The motion detector circuit 112 only identifies variations between signals delivered from camera 36 to detector circuit 112. *Ortiz et al.* analyzing variations in the magnitude of the video signals necessarily requires that the analysis involve at least two signals. There would be no other way to determine whether or not a variation exists with only one signal magnitude. Although the motion detector circuit 112 receives the signals from the cameras 36, there is no analysis, or "methodical examination" of any one signal magnitude by itself. Receiving a signal does not by itself amount to an analysis. The only analysis taught by *Ortiz et al.* is the comparison of at least two signal magnitudes to detect a variation and thus a defect. Thus, *Ortiz et al.* does not disclose all of the limitations of claims 15 and 31. Applicants therefore respectfully submit that rejection is unsupported by the art and request that the Examiner withdraw the rejection with respect to claims 15 and 31.

⁴ *Ortiz*, column 7, lines 7-8.

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As claims 17, 18, and 21 depend either directly or indirectly from claim 15, *Ortiz et al.* also does not disclose all of the limitations of claims 17, 18, and 21. Therefore, Applicants request that the Examiner withdraw the rejection with respect to claims 17, 18, and 21 as well.

II. CLAIM REJECTIONS – 35 U.S.C. § 103

A. Rejection of claims 15, 17, 18, 21, 22, 23, 31, and 32 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *Ortiz et al.* and *Kanzaka et al.*

1. Examiner comments

The Examiner rejected claims 15, 17, 18, 21, 22, 23, 31, and 32 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *Ortiz et al.* and *Kanzaka et al.* (U.S. Patent No. 5,680,473A).

2. Law

MPEP § 2142 states that the Examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the Examiner does not produce a *prima facie* case, the Applicants are under no obligation to submit evidence of nonobviousness.

To establish a *prima facie* case of obviousness, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings.⁵ The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.⁶ In addition, if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the

⁵ MPEP § 2142.

⁶ *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990) (Claims were directed to an apparatus for producing an aerated cementitious composition by drawing air into the cementitious composition by driving the output pump at a capacity greater than the feed rate. The prior art reference taught that the feed means can be run at a variable speed, however the court found that this does not require that the output pump be run at the claimed speed so that air is drawn into the mixing chamber and is entrained in the ingredients during operation. Although a prior art device "may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so." 916 F.2d at 682, 16 USPQ2d at 1432.); *see also In re Fritsch*, 972 F.2d 1260, 23 USPQ2d 1780 (Fed. Cir. 1992) (flexible landscape edging device which is conformable to a ground surface of varying slope not suggested by combination of prior art references).

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claims *prima facie* obvious.⁷ To establish a *prima facie* case of obviousness, the prior art reference (or references when combined) must also teach or suggest all the claim limitations.⁸

3. Claims 15, 17, 18, 21, 22, 23, 31, and 32

Applicants respectfully submit that a *prima facie* case of obviousness has not been established because modifying *Ortiz et al.* with *Kanzaka et al.*, if *Kanzaka et al.* operates as the Examiner suggests, necessitates changing the entire principle of operation of *Ortiz et al.* *Ortiz et al.*, as described above, uses the principle of comparing video signal magnitudes to determine when there has been a change in the signal magnitude indicating a defect. If *Kanzaka et al.* truly does teach processing or analyzing each image separately, as the Examiner suggests, then this would impermissibly completely change the basic principle of operation of *Ortiz et al.* Thus, there is no *prima facie* case of obviousness because there is no motivation to combine *Ortiz et al.* and *Kanzaka et al.* Applicants therefore respectfully submit that rejection is unsupported by the art and request that the Examiner withdraw the rejection with respect to claims 15 and 31.

Applicants also respectfully submit that a *prima facie* case of obviousness has not been established because the prior art references do not teach or suggest all the claim limitations. Specifically, although the Examiner suggests otherwise, *Kanzaka et al.* does not teach analyzing or processing each image separately, as claims 15 and 31 require. *Kanzaka et al.* teaches photosensing an object to be inspected with a video camera.⁹ *Kanzaka et al.* teaches that, "An image or video signal v from the video camera 2 is processed by an inspection machine 3 that is an electronic processor to inspect the existence or not of defects such as flaws, dirty or the like on the surface the inspected object 1."¹⁰ *Kanzaka et al.* uses the phrase "an image or video signal v" but does not disclose whether there is a difference between an image signal and a video signal or if the two terms are interchangeable for one another. The modifier "an" for video signal does not necessarily limit the signal to a single image, but instead refers to a single signal. Thus, *Kanzaka et al.* also does not disclose whether the "image signal" is one image or multiple images. Additionally, *Kanzaka et al.* teaches that within the inspection machine 3, "The output video signal v from the video camera 2 is supplied to a flaw detection unit 4. This flaw detection unit 4 outputs

⁷ *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959).

⁸ MPEP § 2142.

⁹ *Kanzaka et al.*, column 2, lines 57-58.

¹⁰ *Kanzaka et al.*, column 2, lines 59-62.

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a flaw detection signal d, only when there is a defect such as a flaws, dirty or the like on the surface of the inspected object 1. This detection signal d is supplied to a video processing unit 5. This video processing unit 5 processes the detection signal d and produces necessary data D related to the surface defects on the inspected object 1, such as the location thereof in the width direction of the inspected object 1 as well as the size thereof, etc."¹¹ However, *Kanzaka et al.* never discloses how the flaw detection unit 4 detects a defect to output the detections signal d. The flaw detection unit 4 could be comparing multiple images to detect defects on the inspected object. Without expressly stating whether the detection unit 4 analyzes each image separately, *Kanzaka et al.* cannot be said to disclose the claim requirement of processing or analyzing each image separately. There is also no possibility of inherent disclosure as there exist any number of possibilities as to how the flaw detection unit 4 detects defects. Thus, there is no *prima facie* case of obviousness because *Ortiz et al.* and *Kanzaka et al.* fail to teach all of the limitations of the claims. Applicants therefore respectfully submit that rejection is unsupported by the art and request that the Examiner withdraw the rejection with respect to claims 15 and 31.

As claims 17, 18, 21, 22, 23, and 32 depend either directly or indirectly from claim 15 or 31, claims 17, 18, 21, 22, 23, and 32 are also not obvious under 35 U.S.C. § 103(a). Therefore, Applicants request that the Examiner withdraw the rejection with respect to claims 17, 18, 21, 22, 23, and 32 as well.

B. Rejection of claim 41 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *Ortiz et al.* and *Kanzaka et al.* as applied to claim 31, and further in combination with *Puffer*

The Examiner rejected claim 41 Under 35 U.S.C. § 103(a) as being unpatentable over the combination of *Ortiz et al.* and *Kanzaka et al.* as applied to claim 31, and further in combination with *Puffer*.

Applicants repeat the arguments made above for claim 31. If an independent claim is nonobvious under 35 U.S.C. § 103, then any claim depending therefrom is nonobvious.¹² As claim 41 depends directly from claim 31, claim 41 is also not obvious under 35 U.S.C. § 103(a).

¹¹ *Kanzaka et al.*, column 2, line 65-column 3, line 7.

¹² MPEP § 2143.03.

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Therefore, Applicants request that the Examiner withdraw the rejection with respect to claim 41 as well.

C. Rejection of claim 24 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *Ortiz et al.* and *Kanzaka et al.* as applied to claim 15, and further in combination with *Newman*

The Examiner rejected claim 24 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *Ortiz et al.* and *Kanzaka et al.* as applied to claim 15, and further in combination with *Newman*.

Applicants repeat the arguments made above for claim 15. If an independent claim is nonobvious under 35 U.S.C. § 103, then any claim depending therefrom is nonobvious.¹³ As claim 24 depends directly from claim 15, claim 24 is also not obvious under 35 U.S.C. § 103(a). Therefore, Applicants request that the Examiner withdraw the rejection with respect to claim 24 as well.

D. Rejection of claim 25 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *Ortiz et al.* and *Kanzaka et al.* as applied to claim 15, and further in combination with *Hametner et al.*

The Examiner rejected claim 24 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *Ortiz et al.* and *Kanzaka et al.* as applied to claim 15, and further in combination with *Hametner et al.*

Applicants repeat the arguments made above for claim 15. If an independent claim is nonobvious under 35 U.S.C. § 103, then any claim depending therefrom is nonobvious.¹⁴ As claim 25 depends directly from claim 15, claim 25 is also not obvious under 35 U.S.C. § 103(a). Therefore, Applicants request that the Examiner withdraw the rejection with respect to claim 25 as well.

¹³ MPEP § 2143.03.

¹⁴ MPEP § 2143.03.

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E. Rejection of claim 16 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *Ortiz et al.* and *Kanzaka et al.* as applied to claim 15, and further in combination with *Greenwood et al.*

The Examiner rejected claim 16 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *Ortiz et al.* and *Kanzaka et al.* as applied to claim 15, and further in combination with *Greenwood et al.*

Applicants repeat the arguments made above for claim 15. If an independent claim is nonobvious under 35 U.S.C. § 103, then any claim depending therefrom is nonobvious.¹⁵ As claim 16 depends directly or indirectly from claim 15, claim 16 is also not obvious under 35 U.S.C. § 103(a). Therefore, Applicants request that Examiner withdraw the rejection with respect to dependent claim 16 as well.

F. Rejection of claims 19 and 20 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *Ortiz et al.* and *Kanzaka et al.* as applied to claim 15, and further in combination with *Chiu et al.*

The Examiner rejected claims 19 and 20 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *Ortiz et al.* and *Kanzaka et al.* as applied to claim 15, and further in combination with *Chiu et al.*

Applicants repeat the arguments made above for claim 15. If an independent claim is nonobvious under 35 U.S.C. § 103, then any claim depending therefrom is nonobvious.¹⁶ As claims 19 and 20 depend directly or indirectly from claim 15, claims 19 and 20 are also not obvious under 35 U.S.C. § 103(a). Therefore, Applicants request that the Examiner withdraw the rejection with respect to dependent claims 19 and 20 as well.

¹⁵ MPEP § 2143.03.

¹⁶ MPEP § 2143.03.

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G. Rejection of claims 1-3, 5-7, and 9 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *McCoy et al.* and *Kanzaka et al.*, and further in combination with *Morrison et al.*

1. Examiner comments

The Examiner rejected claims 1-3, 5-7, and 9 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *McCoy et al.* (U.S. Patent No. 5,767,671A) and *Kanzaka et al.*, and further in combination with *Morrison et al.*

2. Law

MPEP § 2142 states that the Examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the Examiner does not produce a *prima facie* case, the Applicants are under no obligation to submit evidence of nonobviousness.

To establish a *prima facie* case of obviousness, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings.¹⁷ The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.¹⁸ In addition, if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious.¹⁹ To establish a *prima facie* case of obviousness, the prior art reference (or references when combined) must also teach or suggest all the claim limitations.²⁰

¹⁷ MPEP § 2142.

¹⁸ *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990) (Claims were directed to an apparatus for producing an aerated cementitious composition by drawing air into the cementitious composition by driving the output pump at a capacity greater than the feed rate. The prior art reference taught that the feed means can be run at a variable speed, however the court found that this does not require that the output pump be run at the claimed speed so that air is drawn into the mixing chamber and is entrained in the ingredients during operation. Although a prior art device "may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so." 916 F.2d at 682, 16 USPQ2d at 1432.); see also *In re Fritch*, 972 F.2d 1260, 23 USPQ2d 1780 (Fed. Cir. 1992) (flexible landscape edging device which is conformable to a ground surface of varying slope not suggested by combination of prior art references).

¹⁹ *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959).

²⁰ MPEP § 2142.

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3. Claims 1-3, 5-7, and 9

Applicants respectfully submit that a *prima facie* case of obviousness has not been established because modifying *McCoy et al.* with *Kanzaka et al.*, if *Kanzaka et al.* operates as the Examiner suggests, necessitates changing the entire principle of operation of *McCoy et al.* *McCoy et al.* teaches a method of testing coiled tubing comprising determining a lifeline for a selected type of coiled tubing made of a known material and having a nominal diameter and wall thickness. This lifeline is determined by: (a1) using a selected coiled tubing of the selected type such that the selected coiled tubing undergoes stress and strain in response to forces encountered in using a coiled tubing at an oil or gas well; (a2) after step (a1), performing at least one nondestructive evaluation test on the selected coiled tubing to obtain an output data event; (a3) recording the output data event; (a4) repeating steps (a1) through (a3) throughout a lifetime of the selected coiled tubing so that a sequence of recorded output data events is obtained for the selected coiled tubing; (a5) repeating steps (a1) through (a4) for a plurality of selected coiled tubings of the selected type so that a plurality of sequences of recorded output data events are obtained; and (a6) defining the lifeline for the selected type of coiled tubing in response to the plurality of sequences of recorded output data events. *McCoy et al.* further teaches: (b) performing the at least one test on a coiled tubing of the selected type, including obtaining a specific output data event for the coiled tubing using a sensor 52; (c) comparing the specific output data event with the defined lifeline for determining where the defined lifeline and the specific output data event correspond using a computer 54; and (d) generating a coiled tubing status indication in response to where the specific output data event corresponds with the defined lifeline as a measure of a point in the useful life of the coiled tubing of step (b).

As described, *McCoy et al.* compares data taken from a test on a tubing with a "lifeline" that has been previously determined for that type of tubing by previous initial tests performed at various stages in the type of tubing's operational life. If *McCoy et al.* was modified with *Kanzaka et al.*, then there would be no need to perform the initial tests to determine the "lifeline" of the selected type of tubing because *Kanzaka et al.* would allow the images themselves to be processed to determine the existence of defects and would not require the previous initial tests on the tubing. This would impermissibly and completely change the basic principle of operation of *McCoy et al.* Thus, there is no *prima facie* case of obviousness because there is no motivation to combine *McCoy et al.* and *Kanzaka et al.* Applicants therefore respectfully submit that rejection is

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unsupported by the art and request that the Examiner withdraw the rejection with respect to claim 1.

Applicants also respectfully submit that a *prima facie* case of obviousness has not been established because the prior art references do not teach or suggest all the claim limitations. Specifically, although the Examiner suggests otherwise, *Kanzaka et al.* does not teach analyzing or processing each image separately, as claim 1 requires. *Kanzaka et al.* teaches photosensing an object to be inspected with a video camera.²¹ *Kanzaka et al.* teaches that, "An image or video signal v from the video camera 2 is processed by an inspection machine 3 that is an electronic processor to inspect the existence or not of defects such as flaws, dirty or the like on the surface the inspected object 1."²² *Kanzaka et al.* uses the phrase "an image or video signal v" but does not disclose whether there is a difference between the image signal and the video signal or if the two terms are interchangeable for one another. The modifier "an" for video signal does not necessarily limit the signal to a single image, but instead refers to a single signal. Thus, *Kanzaka et al.* also does not disclose whether "an image signal" is signal relating to one image or multiple images. Additionally, *Kanzaka et al.* teaches that within the inspection machine 3, "The output video signal v from the video camera 2 is supplied to a flaw detection unit 4. This flaw detection unit 4 outputs a flaw detection signal d, only when there is a defect such as a flaws, dirty or the like on the surface of the inspected object 1. This detection signal d is supplied to a video processing unit 5. This video processing unit 5 processes the detection signal d and produces necessary data D related to the surface defects on the inspected object 1, such as the location thereof in the width direction of the inspected object 1 as well as the size thereof, etc."²³ However, *Kanzaka et al.* never discloses how the flaw detection unit 4 detects a defect to output the detections signal d. The flaw detection unit 4 could be comparing multiple images to detect defects on the inspected object. Without expressly stating whether the detection unit 4 analyzes each image separately, *Kanzaka et al.* cannot be said to disclose the claim requirement of processing or analyzing each image separately. There is also no possibility of inherent disclosure as there exist any number of possibilities as to how the flaw detection unit 4 detects defects. Thus, there is no *prima facie* case of obviousness

²¹ *Kanzaka et al.*, column 2, lines 57-58.

²² *Kanzaka et al.*, column 2, lines 59-62.

²³ *Kanzaka et al.*, column 2, line 65-column 3, line 7.

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because *McCoy et al.*, *Kanzaka et al.*, and *Morrison et al.* fail to teach all of the limitations of the claims. Applicants therefore respectfully submit that rejection is unsupported by the art and request that the Examiner withdraw the rejection with respect to claim 1.

As claims 2-3, 5-7, and 9 depend either directly or indirectly from claim 1, claims 2-3, 5-7, and 9 are also not obvious under 35 U.S.C. § 103(a). Therefore, Applicants request that the Examiner withdraw the rejection with respect to claims 2-3, 5-7, and 9 as well.

H. Rejection of claim 43 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *McCoy et al.*, *Kanzaka et al.*, and *Morrison et al.* as applied to claim 1, and further in combination with *Terry et al.*

The Examiner rejected claim 43 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *McCoy et al.*, *Kanzaka et al.*, and *Morrison et al.* as applied to claim 1, and further in combination with *Terry et al.*

Applicants repeat the arguments made above for claim 1. If an independent claim is nonobvious under 35 U.S.C. § 103, then any claim depending therefrom is nonobvious.²⁴ As claim 43 depends directly from claim 1, claim 43 is also not obvious under 35 U.S.C. § 103(a). Therefore, Applicants request that the Examiner withdraw the rejection with respect to dependent claim 43 as well.

I. Rejection of claims 44 and 45 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *McCoy et al.*, *Kanzaka et al.*, *Morrison et al.*, and *Terry et al.* as applied to claim 43, and further in combination with *Newman*

The Examiner rejected claims 44 and 45 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *McCoy et al.*, *Kanzaka et al.*, *Morrison et al.*, and *Terry et al.* as applied to claim 43, and further in combination with *Newman*.

Applicants repeat the arguments made above for claim 1. If an independent claim is nonobvious under 35 U.S.C. § 103, then any claim depending therefrom is nonobvious.²⁵ As claims 44 and 45 depend indirectly from claim 1, claims 44 and 45 are also not obvious under 35 U.S.C. § 103(a). Therefore, Applicants request that the Examiner withdraw the rejection with respect to dependent claims 44 and 45 as well.

²⁴ MPEP § 2143.03.

²⁵ MPEP § 2143.03.

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J. Rejection of claim 8 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *McCoy et al.*, *Kanzaka et al.*, and *Morrison et al.* as applied to claim 1, and further in combination with *Hametner et al.*

The Examiner rejected claim 8 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *McCoy et al.*, *Kanzaka et al.*, and *Morrison et al.* as applied to claim 1, and further in combination with *Hametner et al.*

Applicants repeat the arguments made above for claim 1. If an independent claim is nonobvious under 35 U.S.C. § 103, then any claim depending therefrom is nonobvious.²⁶ As claim 8 depends directly from claim 1, claim 8 is also not obvious under 35 U.S.C. § 103(a). Therefore, Applicants request that the Examiner withdraw the rejection with respect to dependent claim 8 as well.

K. Rejection of claim 4 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *McCoy et al.*, *Kanzaka et al.*, and *Morrison et al.* as applied to claim 1, and further in combination with *Endsley et al.*

The Examiner rejected claim 4 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *McCoy et al.*, *Kanzaka et al.*, and *Morrison et al.* as applied to claim 1, and further in combination with *Endsley et al.* (U.S. Patent No. 6,005,613).

Applicants repeat the arguments made above for claim 1. If an independent claim is nonobvious under 35 U.S.C. § 103, then any claim depending therefrom is nonobvious.²⁷ As claim 4 depends directly from claim 1, claim 4 is also not obvious under 35 U.S.C. § 103(a). Therefore, Applicants request that the Examiner withdraw the rejection with respect to dependent claim 4 as well.

L. Rejection of claim 26 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *Puffer* and *Morrison et al.*

1. Examiner comments

The Examiner rejected claim 26 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *Puffer* and *Morrison et al.*

²⁶ MPEP § 2143.03.

²⁷ MPEP § 2143.03.

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2. Law

MPEP § 2142 states that the Examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the Examiner does not produce a *prima facie* case, the Applicants are under no obligation to submit evidence of nonobviousness.

To establish a *prima facie* case of obviousness, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings.²⁸ The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.²⁹ In addition, if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious.³⁰ Also, if the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification.³¹ To establish a *prima facie* case of obviousness, the prior art reference (or references when combined) must also teach or suggest all the claim limitations.³²

3. Claim 26

Applicants respectfully submit that a *prima facie* case of obviousness has not been established because there is no motivation to combine *Puffer* with *Morrison et al.* There is no motivation because modifying *Puffer* with *Morrison et al.* necessitates changing the entire principle of operation of *Puffer*. *Morrison et al.* teaches an assembly for determining the position

²⁸ MPEP § 2142.

²⁹ *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990) (Claims were directed to an apparatus for producing an aerated cementitious composition by drawing air into the cementitious composition by driving the output pump at a capacity greater than the feed rate. The prior art reference taught that the feed means can be run at a variable speed, however the court found that this does not require that the output pump be run at the claimed speed so that air is drawn into the mixing chamber and is entrained in the ingredients during operation. Although a prior art device "may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so." 916 F.2d at 682, 16 USPQ2d at 1432.); see also *In re Fritch*, 972 F.2d 1260, 23 USPQ2d 1780 (Fed. Cir. 1992) (flexible landscape edging device which is conformable to a ground surface of varying slope not suggested by combination of prior art references).

³⁰ *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959).

³¹ *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

³² MPEP § 2142.

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of a rectilinear feature of an article as for example a width measurement and edge tracking system where the edges of a strip of steel are being trimmed to reduce the total strip width to a precisely known desired value. The apparatus includes a solid state array camera and lens combination 6 including a two-dimensional orthogonal array of individual radiation responsive elements, each of which gives a voltage signal proportional to the incident light intensity. The video camera is a charge coupled device (CCD) that includes a radiation-responsive sensor of the kind comprising a solid state orthogonal array of radiation sensitive elements arranged in rows and columns and corresponding in number and disposition to the pixels of a video image to determine the position of a rectilinear feature of an article causing an abrupt change in the brightness of the camera's field of view. The camera sends a video stream of information from the two-dimensional orthogonal array of rows and columns one row at a time. At the end of each row there is a synchronization pulse that acts as a terminator for the old row and an initiator for the new row. The camera preferably uses ambient light. The video camera is connected to a frame grabber 9 comprising a digitizer and frame store. The frame grabber 9 is interfaced with an appropriate computer 10 that is connected to a monitor 11. The vision processing means collects, stores, and analyzes the information provided by the camera. The vision processing means digitizes the information from the camera into a large range of numbers representing brightness or grey level. The information from the digitizer is stored in a dedicated area of memory called a frame store. In operation, an image of the strip is produced on the sensor array, transmitted by the camera as a video signal. This signal is then converted to a digital signal that is stored in a computer. The data is transferred to an appropriately sized array in the computer memory, the files (rows and columns) of which correspond to those of the sensor elements and of the original picture captured by the camera. Summing all the horizontal rows produces a linear array of summation values in which the values are allocated to positions corresponding to the positions along the perpendicular axis of the CCD array of sensor elements of the rows of elements from which the values were derived. A position algorithm recognizes the edges of the strip from the relatively small scale derived radiation profile. The edge positions are then passed to a precise position algorithm where further grey scale sums are calculated to produce further linear arrays of summation values defining large scale derived radiation profile relevant to the respective edges of the strip 7. From the edge positions, the strip width can then be calculated. The actual position of the strip edge from a reference point can also be calculated.

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Morrison et al. analyzes the sum of the gray scale values of the sensor elements of each row of pixels to determine the relative position of the edge of the article being examined. If the analysis performed by *Morrison et al.* were incorporated into *Puffer*, this would impermissibly completely change *Puffer's* principle of using light reflected onto pixels to detect defects on the surface of the inspection object. Thus, there is no *prima facie* case of obviousness because there is no motivation to combine *Puffer* and *Kanzaka et al.* Applicants therefore respectfully submit that rejection is unsupported by the art and request that the Examiner withdraw the rejection with respect to claim 26.

Applicants also respectfully submit that there is no motivation to combine because modifying *Puffer* with *Morrison et al.* would render *Puffer* unsatisfactory for its intended purpose. *Puffer* analyzes light reflected off the surface of an inspection object to detect the presence of defects or "pips". *Morrison et al.* analyzes an image to determine the position of the edge of the item being analyzed. *Morrison et al.* does not teach analyzing the object for anything other than the location of the edges of the object. Analyzing an image using the method taught by *Morrison et al.* would not detect the defects or "pips" that *Puffer* attempts to detect. Modifying *Puffer* with *Morrison et al.* would thus render *Puffer* unsatisfactory for its intended purpose. Applicants therefore respectfully submit that the rejection is unsupported by the art and request that the Examiner withdraw the rejection with respect to claim 26.

Applicants also respectfully submit that a *prima facie* case of obviousness has not been established with respect to claim 26 because the prior art references do not teach or suggest all the claim limitations.

First, claim 26 does not require a pattern classifier circuit.

Second, *Puffer* does not disclose extracting discrete anomalies of the tubing surface from images of the tubing surface. *Puffer* includes plurality of white light sources 26 that project a beam of light 28 onto the surface of cable 16. The light beams 28 cumulatively form an annular band 30 on the surface of cable 16 that is irradiated by the light. If a pip 22 appears in the coated cable in the irradiated band 30, the incident light will be scattered in numerous directions. A deflecting mirror 34 and an imaging lens 36 collects the scattered light and deflects that light onto an anti-blooming detector array 38. The detector array 38 is preferably of the type possessing anti-blooming characteristics, such as a charge injection device (CID), having an array or matrix defining a large number of discrete picture elements, or pixels, for maintaining the fidelity of the

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image projected thereon. Thus, the "image" that is reflected onto the pixels is not an image of the tubing surface at all. Instead, the "image" reflected onto the pixels is only an image of the "pips" themselves and not the overall tubing surface. Therefore, *Puffer* does not teach extracting these "pips" from an image of the tubing surface.

Third, *Puffer* does not disclose comparing the size of an anomaly against a user-defined threshold. Instead, *Puffer* discloses comparing the amount or intensity of light reflected onto and registered by each individual pixel against a user-defined threshold. *Puffer* discloses analytical electronics 44 that include the slicer 48, the counter 52, and the comparator 54. Analytical electronics block 44 includes scanning control electronics 45 providing a scanning raster for scanning the pixel outputs of detector 38. The scanned signal of light reflected from the inspected object is extended to the slicer 48 that provides an output only if the intensity of the light signal for a respective pixel exceeds a threshold that is pre-selected to reject low-level light from acceptable cable surface. The output of the slicer 48 is transmitted to a counter 52 and a comparator 54. The counter 52 increments each time a pixel senses light above the threshold level and provides an output 55 to an alarm 56 each time a pre-selected count is reached. The intensity of light reflected from a "pip" as registered by any one pixel depends on the angle of reflection of the light in relation to the detector 38, and not the actual size of the "pip" itself. For example, there could be a "pip" of a large size that, because of its configuration, does not reflect as intense an amount of light onto a given pixel as a smaller "pip" that reflects a more intense amount of light onto the given pixel. This is true even though the larger "pip" may reflect light onto more pixels than the smaller "pip". Although both may reflect light with an intensity to surpass the user-defined threshold, the intensity of light reflected onto any given pixel is not necessarily indicative of the size of the "pip" itself. Rather, the size of the "pip" would be more indicated by the amount of light reflected onto all the pixels together. But *Puffer* does not teach comparing the amount of light reflected on all the pixels against a user-defined threshold. Thus, *Puffer* does not teach comparing the size of any anomaly against a user-defined threshold.

Thus, there is no *prima facie* case of obviousness because *Puffer*, and *Morrison et al.* fail to teach all of the limitations of the claims. Applicants therefore respectfully submit that rejection is unsupported by the art and request that the Examiner withdraw the rejection with respect to claim 26.

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M. Rejection of claims 27 and 29 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *Puffer* and *Morrison et al.* as applied to claim 26, and further in combination with *Ortiz et al.* and *Vild et al.*

The Examiner rejected claims 27 and 29 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *Puffer* and *Morrison et al.* as applied to claim 26, and further in combination with *Ortiz et al.* and *Vild et al.* (U.S. Patent No. 4,123,708A).

Applicants repeat the arguments made above for claim 26. If an independent claim is nonobvious under 35 U.S.C. § 103, then any claim depending therefrom is nonobvious.³³ As claims 27 and 29 depend from claim 26, claims 27 and 29 are also not obvious under 35 U.S.C. § 103(a). Therefore, Applicants request that the Examiner withdraw the rejection with respect to dependent claims 27 and 29 as well.

N. Rejection of claims 28 and 30 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *Puffer*, *Morrison et al.*, *Ortiz et al.*, and *Vild et al.* as applied to claim 27 above, and further in combination with *Kanzaka et al.*

The Examiner rejected claims 28 and 30 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *Puffer*, *Morrison et al.*, *Ortiz et al.*, and *Vild et al.* as applied to claim 27 above, and further in combination with *Kanzaka et al.*

Applicants repeat the arguments made above for claim 26. If an independent claim is nonobvious under 35 U.S.C. § 103, then any claim depending therefrom is nonobvious.³⁴ As claims 28 and 30 depend from claim 26, claims 28 and 30 are also not obvious under 35 U.S.C. § 103(a). Therefore, Applicants request that the Examiner withdraw the rejection with respect to dependent claims 28 and 30 as well.

O. Rejection of claim 13 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *McCoy et al.* and *Kanzaka et al.*, and further in combination with *Newman and Reis et al.*

The Examiner rejected claim 13 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *McCoy et al.* and *Kanzaka et al.*, and further in combination with *Newman and Reis et al.* (U.S. Patent No. 4,311,905A).

³³ MPEP § 2143.03.

³⁴ MPEP § 2143.03.

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Applicants repeat the arguments made above for claim 1. Applicants respectfully submit that there is no *prima facie* case of obviousness because there is no motivation to combine *McCoy et al.* and *Kanzaka et al.* There is also no *prima facie* case of obviousness because *McCoy et al.*, *Kanzaka et al.*, *Newman*, and *Reis et al.* fail to teach all of the limitations of the claims. Applicants therefore respectfully submit that rejection is unsupported by the art and request that the Examiner withdraw the rejection with respect to claim 13.

P. Rejection of claim 14 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *McCoy et al.*, *Kanzaka et al.*, *Newman*, and *Reis et al.* as applied to claim 13 above, and further in combination with *Garcia et al.*

The Examiner rejected claim 36 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *McCoy et al.*, *Kanzaka et al.*, *Newman*, and *Reis et al.* as applied to claim 13 above, and further in combination with *Garcia et al.* (U.S. Patent No. 5,923,771A).

Applicants repeat the arguments made above for claim 13. If an independent claim is nonobvious under 35 U.S.C. § 103, then any claim depending therefrom is nonobvious.³⁵ As claim 14 depends from claim 13, claim 14 is also not obvious under 35 U.S.C. § 103(a). Therefore, Applicants request that the Examiner withdraw the rejection with respect to dependent claim 14 as well.

Q. Rejection of claim 36 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *McCoy et al.*, *Kanzaka et al.*, *Newman*, and *Reis et al.* as applied to claim 13 above, and further in combination with *Ortiz et al.*

The Examiner rejected claim 36 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *McCoy et al.*, *Kanzaka et al.*, *Newman*, and *Reis et al.* as applied to claim 13 above, and further in combination with *Ortiz et al.*

Applicants point out that in the previous Office action dated January 20, 2004, the Examiner indicated that claim 36 would be allowable if re-written in independent form. In Applicants' response to Office action dated April 20, 2004, Applicants amended claim 36 into independent form. The Examiner indicated that the April 20, 2004 amendment was entered for purposes of this Office action. Applicants are now confused as to the status of claim 36. If the amendments placing claim 36 in condition for allowance were entered, there should not be a

³⁵ MPEP § 2143.03.

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rejection of claim 36. If the Examiner intended to not allow claim 36 as amended, the amendments should not have been entered as they were only made because the Examiner indicated the amendments would place the claim in condition for allowance. The Applicants request that the Examiner clarify the status of claim 36. The Applicants also request that, if the Examiner decided to enter the amendments and then not allow the claim, that the Examiner remove the entered amendments so as to not prejudice the Applicants as the amendments were only submitted to place the claim in condition for allowance.

Regardless, Applicants repeat the arguments made above for claims 1, 15, and 31. There is no *prima facie* case of obviousness because there is no motivation to combine *McCoy et al.* and *Kanzaka et al.* There is also no *prima facie* case of obviousness because *McCoy et al.*, *Kanzaka et al.*, *Newman, Reis et al.*, and *Ortiz et al.* fail to teach all of the limitations of the claims. Applicants therefore respectfully submit that rejection is unsupported by the art and request that the Examiner withdraw the rejection with respect to claim 36.

R. Rejection of claims 31, 34, and 37 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *McCoy et al.* and *Kanzaka et al.*, and further in combination with *Ortiz et al.*

The Examiner rejected claims 31, 34, and 37 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *McCoy et al.* and *Kanzaku et al.*, and further in combination with *Ortiz et al.*

Applicants repeat the arguments made above for claims 1, 15, and 31 regarding the combination of the three references. There is no *prima facie* case of obviousness because there is no motivation to combine *McCoy et al.*, *Kanzaka et al.*, and *Ortiz et al.* There is also no *prima facie* case of obviousness because *McCoy et al.*, *Kanzaka et al.*, and *Ortiz et al.* fail to teach all of the limitations of the claims. Applicants therefore respectfully submit that rejection is unsupported by the art and request that the Examiner withdraw the rejection with respect to claim 31.

As claims 34 and 37 depend from claim 1, a *prima facie* case of obviousness also does not exist with respect to claims 34 and 37. Therefore, Applicants request that the Examiner withdraw the rejection with respect to claims 34 and 37 as well.

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S. Rejection of claim 33 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *McCoy et al.*, *Kanzaka et al.*, and *Ortiz et al.* as applied to claim 31, and further in combination with *Newman*

The Examiner rejected claim 33 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *McCoy et al.*, *Kanzaka et al.*, and *Ortiz et al.* as applied to claim 31, and further in combination with *Newman*.

Applicants repeat the arguments made above for claim 31. If an independent claim is nonobvious under 35 U.S.C. § 103, then any claim depending therefrom is nonobvious.³⁶ As claim 33 depends from claim 31, claim 33 is also not obvious under 35 U.S.C. § 103(a). Therefore, Applicants request that the Examiner withdraw the rejection with respect to dependent claim 33 as well.

T. Rejection of claim 42 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *McCoy et al.*, *Kanzaka et al.*, and *Ortiz et al.* as applied to claim 31, and further in combination with *Husseiny*

The Examiner rejected claim 42 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *McCoy et al.*, *Kanzaka et al.*, and *Ortiz et al.* as applied to claim 31, and further in combination with *Husseiny*.

Applicants repeat the arguments made above for claim 31. If an independent claim is nonobvious under 35 U.S.C. § 103, then any claim depending therefrom is nonobvious.³⁷ As claim 42 depends from claim 31, claim 42 is also not obvious under 35 U.S.C. § 103(a). Therefore, Applicants request that the Examiner withdraw the rejection with respect to dependent claim 42 as well.

U. Rejection of claim 35 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *McCoy et al.*, *Kanzaka et al.*, and *Ortiz et al.* as applied to claim 34, and further in combination with *Vild et al.*

The Examiner rejected claim 35 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *McCoy et al.*, *Kanzaka et al.*, and *Ortiz et al.* as applied to claim 31, and further in combination with *Vild et al.*

³⁶ MPEP § 2143.03.

³⁷ MPEP § 2143.03.

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Applicants repeat the arguments made above for claim 31. If an independent claim is nonobvious under 35 U.S.C. § 103, then any claim depending therefrom is nonobvious.³⁸ As claim 35 depends from claim 31, claim 35 is also not obvious under 35 U.S.C. § 103(a). Therefore, Applicants request that the Examiner withdraw the rejection with respect to dependent claim 35 as well.

V. Rejection of claim 38 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *McCoy et al.*, *Kanzaka et al.*, and *Ortiz et al.* as applied to claim 31, and further in combination with *McCafferty et al.*

The Examiner rejected claim 38 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *McCoy et al.*, *Kanzaka et al.*, and *Ortiz et al.* as applied to claim 31, and further in combination with *McCafferty et al.* (U.S. Patent No. 6,273,188 B1).

Applicants repeat the arguments made above for claim 31. If an independent claim is nonobvious under 35 U.S.C. § 103, then any claim depending therefrom is nonobvious.³⁹ As claim 38 depends from claim 31, claim 38 is also not obvious under 35 U.S.C. § 103(a). Therefore, Applicants request that the Examiner withdraw the rejection with respect to dependent claim 38 as well.

W. Rejection of claims 39 and 40 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *McCoy et al.*, *Kanzaka et al.*, and *Ortiz et al.* as applied to claim 31, and further in combination with *Morrison et al.*

The Examiner rejected claims 39 and 40 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *McCoy et al.*, *Kanzaka et al.*, and *Ortiz et al.* as applied to claim 31, and further in combination with *Morrison et al.*

Applicants repeat the arguments made above for claim 31. If an independent claim is nonobvious under 35 U.S.C. § 103, then any claim depending therefrom is nonobvious.⁴⁰ As claims 39 and 40 depend from claim 31, claims 39 and 40 are also not obvious under 35 U.S.C. § 103(a). Therefore, Applicants request that the Examiner withdraw the rejection with respect to dependent claims 39 and 40 as well.

³⁸ MPEP § 2143.03.

³⁹ MPEP § 2143.03.

⁴⁰ MPEP § 2143.03.

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X. Rejection of claim 13 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *Lam* and *Kanzaka et al.*, and further in combination with *Newman*

1. Examiner comments

The Examiner rejected claim 13 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *Lam* (U.S. Patent No. 5,043,663) and *Kanzaka et al.*, and further in combination with *Newman*.

2. Law

MPEP § 2142 states that the Examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the Examiner does not produce a *prima facie* case, the Applicants are under no obligation to submit evidence of nonobviousness.

To establish a *prima facie* case of obviousness, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings.⁴¹ The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.⁴² In addition, if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious.⁴³ To establish a *prima facie* case of obviousness, the prior art reference (or references when combined) must also teach or suggest all the claim limitations.⁴⁴

3. Claim 13

Applicants respectfully submit that a *prima facie* case of obviousness has not been established because modifying *Lam* with *Kanzaka et al.*, if *Kanzaka et al.* operates as the Examiner

⁴¹ MPEP § 2142.

⁴² *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990) (Claims were directed to an apparatus for producing an aerated cementitious composition by drawing air into the cementitious composition by driving the output pump at a capacity greater than the feed rate. The prior art reference taught that the feed means can be run at a variable speed, however the court found that this does not require that the output pump be run at the claimed speed so that air is drawn into the mixing chamber and is entrained in the ingredients during operation. Although a prior art device "may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so." 916 F.2d at 682, 16 USPQ2d at 1432.); *see also In re Fritch*, 972 F.2d 1260, 23 USPQ2d 1780 (Fed. Cir. 1992) (flexible landscape edging device which is conformable to a ground surface of varying slope not suggested by combination of prior art references).

⁴³ *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959).

⁴⁴ MPEP § 2142.

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suggests, necessitates changing the entire principle of operation of *Lam*. *Lam* uses the principle of comparing electromagnetic signal magnitudes to determine when there has been a change in the signal magnitude indicating a defect. If *Kanzaka et al.* truly does teach processing or analyzing each image separately, as the Examiner suggests, then this would impermissibly completely change the basic principle of operation of *Lam*. Thus, there is no *prima facie* case of obviousness because there is no motivation to combine *Lam* and *Kanzaka et al.* Applicants therefore respectfully submit that rejection is unsupported by the art and request that the Examiner withdraw the rejection with respect to claims 13.

Y. Rejection of claim 36 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *Lam*, *Kanzaka et al.*, and *Newman* as applied to claim 13, and further in combination with *Ortiz et al.*

The Examiner rejected claim 36 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *Lam*, *Kanzaka et al.*, and *Newman* as applied to claim 13, and further in combination with *Ortiz et al.*

Applicants repeat the statements regarding the correct status of claim 36 made above.

Applicants repeat the arguments made above for claims 1, 13, 15, and 31. There is no *prima facie* case of obviousness because there is no motivation to combine *Lam* and *Kanzaka et al.* There is also no motivation to combine *Kanzaka et al.* and *Ortiz et al.* There is also no *prima facie* case of obviousness because *Lam*, *Kanzaka et al.*, *Newman*, and *Ortiz et al.* fail to teach all of the limitations of the claims. Applicants therefore respectfully submit that rejection is unsupported by the art and request that the Examiner withdraw the rejection with respect to claim 36.

III. ALLOWABLE SUBJECT MATTER

In the January 2004 Office action, the Examiner objected to claim 36 as being dependent upon a rejected base claim but stated that claim 36 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicants amended claim 36 into independent form to include all of the limitations of claim 31, the underlying base claim. Applicants respectfully request that the rejection be removed and that the amended claim 36 be allowed.

IV. STATEMENT REGARDING CLAIMS

Applicants have argued the allowability of the claims by addressing the comments by the Examiner in this paper as well as previously during the prosecution of this application. By doing

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so, Applicants are in no way limiting their ability to argue additional points of novelty regarding the independent claims or dependent claims at a later date.

CONCLUSION

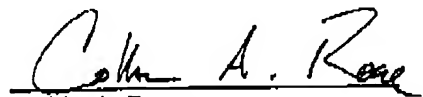
Applicants respectfully request reconsideration the pending claims and that a timely Notice of Allowance be issued in this case. If the Examiner feels that a telephone conference would expedite the resolution of this case, he is respectfully requested to contact the undersigned.

In the course of the foregoing discussions, Applicants may have at times referred to claim limitations in shorthand fashion, or may have focused on a particular claim element. This discussion should not be interpreted to mean that the other limitations can be ignored or dismissed. The claims must be viewed as a whole, and each limitation of the claims must be considered when determining the patentability of the claims. There may also be other distinctions between the claims and the prior art that have yet to be raised, but that may be raised in the future.

If any fees are inadvertently omitted or if any additional fees are required or have been overpaid, please appropriately charge or credit those fees to Conley Rose, P.C. Deposit Account Number 03-2769 (ref. 1391-27300) of Conley Rose, P.C., Houston, Texas.

Respectfully submitted,

CONLEY ROSE, P.C.



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